

Study of the Quality of Surface Water in the Upper Cheliff Basin

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Abstract : This work aims to assess the quality of water dams based on the monitoring of physical-chemical parameters by the National Agency of Water Resources (ANRH) for a period of 10 years (1999-2008). Quality sheets of surface water for the four dams in the region of upper Cheliff (Ghrib, Deurdeur, Harreza, and Ouled Mellouk) show a degradation of the quality (organic pollution expressed in COD and OM) over time. Indeed, the registered amount of COD often exceeds 50 mg/l, and the OM exceeds 15 mg/l. This pollution is caused by discharges of wastewater and eutrophication. The waters of dams show a very high salinity (TDS = 2574 mg/l in 2008 for the waters of the dam Ghrib, standard = 1500 mg/l). The concentration of nitrogenous substances (NH_4^+ , NO_2^-) in water is high in 2008 at Ouled Melloukdam. This pollution is caused by the oxidation of nitrogenous organic matter. On the other hand, we studied the relationship between the evolution of quality parameters and filling dams. We observed a decrease in the salinity and COD following an improvement of the filling state of dams, this resides in the dilution water through the contribution of rainwater. While increased levels of nitrates and phosphorus in the waters of four dams studied during the rainy season is compared to the dry period, this increase may be due to leaching from fertilizers used in agricultural soils situated in watersheds.

Keywords : surface water quality, pollution, physical-chemical parameters, upper Cheliff basin.

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